

WHAT IS CLAIMED IS:

sub A) 1. A closed circuit control device for controlling the scanning speed of a plurality of carriers inside a scanner, comprising:

5 a plurality of optical meters attached to a transparent glass panel and an optical sensor inside the scanner, whereby the optical scanner is capable of continuously picking up images of the optical meters during a scanning session and generating corresponding sense signals for controlling speed of a plurality of carriers.

2. The device of claim 1, wherein each optical meter has a pattern of alternating black and white strips thereon.

10 3. The device of claim 1, wherein each optical meter includes a plurality of bands with each band having a pattern of alternating black and white strips thereon.

4. The device of claim 3, wherein between a center of a white strip and a center of a black strip in a black and white band lies a black strip or a white strip of another black and white band.

15 5. The device of claim 1, wherein the optical sensor includes a charge couple device (CCD).

6. The device of claim 1, wherein the optical sensor includes a contact image sensor (CIS).

20 7. A closed circuit control method for controlling the carrier of a scanner, comprising:

forming an image of an optical meter attached to the carrier in an optical sensor and converting the image into sense signals;

transmitting the sense signals to a computational device for converting frequency of a sense signal to a carrier speed;

comparing a computed carrier speed with a preset speed;

reducing speed of a driving motor if the computed carrier speed is greater than the preset speed;

increasing speed of the driving motor if the computed carrier speed is smaller than the preset speed; and

maintaining speed of the driving motor if the computed carrier speed and the preset speed are identical.

8. The method of claim 7, wherein each optical meter includes a pattern of alternating black and white strips thereon.

9. The method of claim 7, wherein each optical meter includes a plurality of bands with each band having a pattern of alternating black and white strips thereon.

10. The method of claim 9, wherein between a center of a white strip and a center of a black strip in a black and white band lies a black strip or a white strip of another black and white band.

11. The method of claim 7, wherein the optical sensor includes a charge couple device (CCD).

12. The method of claim 7, wherein the optical sensor includes a contact image sensor (CIS).